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A new *Streptocephalus* species (Crustacea: Branchiopoda: Anostraca) from Zimbabwe

by

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ABSTRACT

Streptocephalus wirminghausi sp. n. is described from north-western Zimbabwe. The morphology of the male antennae, frontal appendage, cercopods, and of the egg exterior, is described and illustrated. The new species shares a number of antennal features with the recently described South African species, *S. bourquinii* Hamer & Appleton, 1993.

INTRODUCTION

The anostracan family Streptocephalidae includes a single genus, *Streptocephalus* Baird, 1852, which occurs in temporary waterbodies in Eurasia, Africa and North America. Almost half of the approximately 55 known species have been recorded from Africa. Although the African streptocephalids were recently reviewed in some detail (Hamer *et al.* in press *a,b*) and five new species described (Hamer & Appleton 1993, Hamer & Brendonck 1993), the temporary pools of large parts of southern Africa have not yet been sampled, and the anostracan fauna of such regions is unknown. At the end of 1992 a number of temporary pools on either side of the Zambia-Zimbabwe border were sampled. One set of *Streptocephalus* specimens was found to have an antennal morphology which did not match that of any known species. A male and female with the same morphology in the Zimbabwe National Museum, Bulawayo (NMBZ), from a different locality in the same area, provides additional evidence that the material represents a new species.

MATERIALS AND METHODS

All collection, preservation and illustration techniques are as described in Hamer & Appleton (1993). Terminology for the antennal morphology is from Hamer *et al.* (in press *a*). Measurements are presented as total body length (mean ± standard deviation) from the front of the head (excluding the antennae) to the tip of the cercopods, excluding the setae. Type material is deposited in the Albany Museum, Grahamstown (AMGS), under catalogue number AM LEN 141A.

TAXONOMY

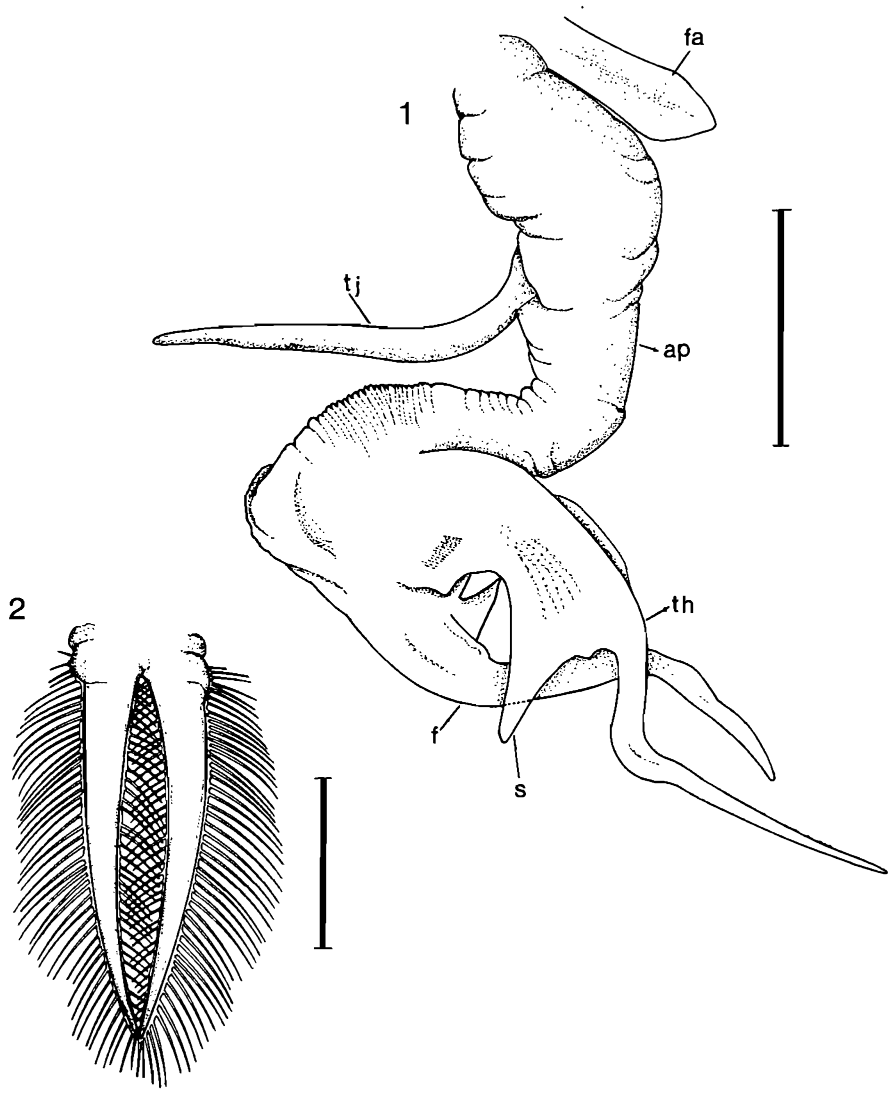
Family Streptocephalidae Daday, 1910

Streptocephalus wirminghausi sp. n.

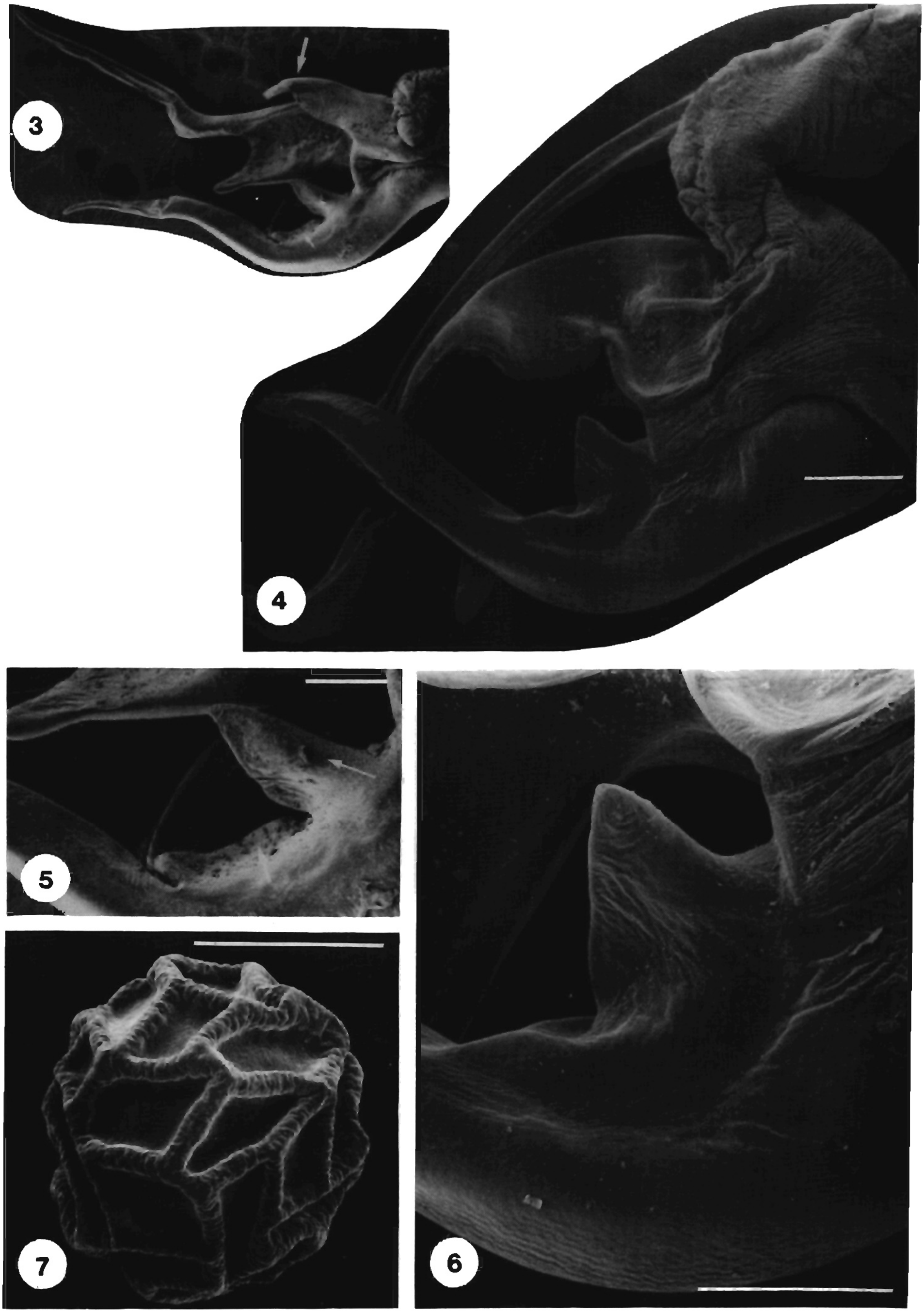
(Figs 1–7)

Etymology: Named for Mr Olaf Wirminghaus (University of Natal), who collected the type material and many other anostracan specimens.

Description: Based on ♂ holotype (12.6mm): ZIMBABWE: 'Chirundu, turn off to sugar estate' [16°02'S:28°52'E] / Date 29-xii-1992 / O. Wirminghaus.'



Figs 1–2. *Streptocephalus wirminghausi* sp. n. 1. Right antenna and frontal appendage, male, lateral view. [ap = antennal process, f = finger, fa = frontal appendage, s = spur, th = thumb, tj = terminal joint]. 2. Dorsal view of cercopods. [Scales = 1 mm].



Figs 3–7. *Streptocephalus* species. 3. *S. bourquinii* Hamer & Appleton, 1993, median view of hand region, male antennal process [arrow shows thumb projection (absent in *S. wirminghausi* sp. n.)]. 4. *S. wirminghausi* sp. n., median view of antennal process, male. 5. *S. bourquinii* Hamer & Appleton, 1993, detail of teeth on dorsal surface of finger [arrow below scale indicates triangular tooth]. 6–7. *S. wirminghausi* sp. n. 6. Detail of triangular tooth on dorsal surface of finger. 7. External egg morphology. [Scales: Figs 3-5, 7 = 100μm, Fig 6 = 50μm.]

Antenna: Terminal joint slender, with slight curve and apically tapered. S-shaped antennal process smooth and simple (Fig. 1). Thumb region elongate, anterior part geniculate distally and tapered to an acute apex. Angle between proximal and distal region of anterior part of thumb about 125°. Thumb spur broad, tapered to blunt apex and separated from anterior part of thumb by small, triangular tooth (Fig. 1). Finger curved dorsally, approximately three-quarters length of thumb (Figs 1, 4). Dorsal margin of proximal region of finger with large, acute triangular tooth (Fig. 6). Finger tapered to narrow apex.

Frontal appendage: As long as basal joint of antenna, narrow and with pointed apex (Fig. 1).

Cercopods: Straight, narrow and with long, plumose setae along entire length of both margins (Fig. 2).

Other material examined: ZIMBABWE: 20 ♀ (12.4 ± 1.2 mm) 20 ♀ (12.8 ± 1.0 mm) **paratypes**, data as holotype; 1 ♂ (10.5 mm) 1 ♀ (13.1 mm), 4 km SW Nyakaskanga Fly Gate [16°09'S:29°08'E], 19.xii.1984, Falcon College Expedition (NZM/Cr 22).

Relationships: *Streptocephalus wirminghausi* closely resembles *S. bourquinii* Hamer & Appleton, 1993, from north-eastern Natal and Swaziland. The general morphology of the antennal process is similar in the two species, but the shape of the tooth on the dorsal margin of the finger, as well as the presence of a second, distal flattened tooth in *S. bourquinii* (Figs 3, 5) clearly separates the two species. *S. wirminghausi* also differs from *S. bourquinii* in having a more prominent tooth separating the anterior part of the thumb from the spur, and in lacking irregular projections on the surface of the antennal process proximal to the hand region. Females of *S. wirminghausi* have a longer egg sac than those of *S. bourquinii* (apex reaching last abdominal segment in *wirminghausi* as opposed to the seventh segment in *bourquinii*). External egg morphology is also different, with *S. wirminghausi* eggs having more distinct ridges separating depressions (Fig. 7), which are smaller than the depressions in *S. bourquinii*.

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REFERENCES

HAMER, M. & APPLETON, C. 1993. Four new *Streptocephalus* (Crustacea, Branchiopoda, Anostraca) species from south-eastern Africa. *Annals of the South African Museum* **103** (2): 167–181.

HAMER, M. & BRENDONCK, L. 1993. A new species of *Streptocephalus* (Crustacea: Branchiopoda: Anostraca) from Namibia. *Annals of the South African Museum* **103** (3): 183–189.

HAMER, M., BRENDONCK, L., COOMANS, A. & APPLETON, C. (In press *a*). A review of the African Streptocephalidae (Crustacea: Branchiopoda: Anostraca). Part 1. Africa south of the Zambezi and Kunene Rivers. *Archivs für Hydrobiologie* **99** (3).

HAMER, M., BRENDONCK, L., APPLETON, C. & COOMANS, A. (In press *b*). A review of the African Streptocephalidae (Crustacea: Branchiopoda: Anostraca). Part 2. Africa north of the Zambezi and Kunene Rivers. *Archivs für Hydrobiologie* **99** (3).

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